LAHORE UNIVERSITY OF MANAGEMENT SCIENCES
Department of Electrical Engineering

EE240 Circuits I
Quiz 01

Total Marks: 10
Time Duration: 20 minutes

Question 1 (10 marks)

(a) [4 marks] The current $i_c(t)$ through the capacitor of capacitance $\frac{1}{4}F$ is shown in Figure 1 below. Determine the voltage across the capacitor. You must show working to support your answer. Also plot the voltage for $1 \leq t \leq 5$.

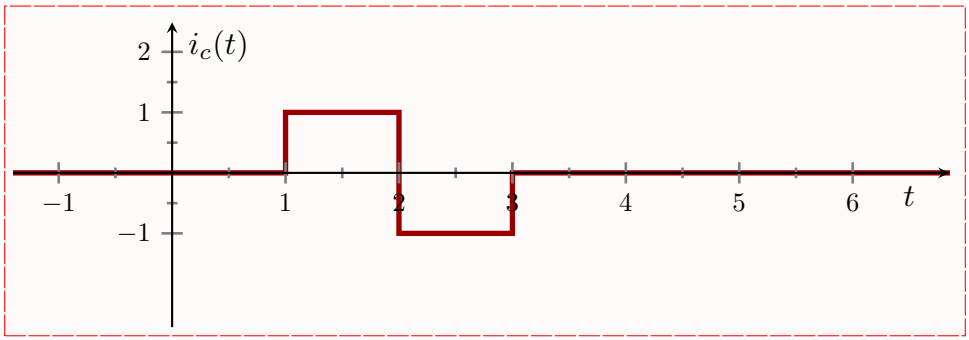
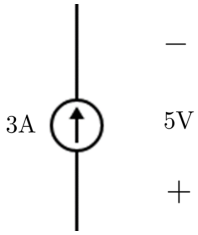


Figure 1: Current through the Capacitor.

(b) [1 mark] Plot $i - v$ characteristics of the ideal DC current source.

(c) [2 marks] The voltage across 3A ideal current source connected in a circuit is indicated in the figure below. Determine the power being supplied by the current source.



(d) [3 marks] Consider the circuit given below. The switch is initially opened and is closed at $t = 0$. Plot $v(t)$, $i_R(t)$ and $i_C(t)$ for all times.